

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number
WO 2004/053117 A3

(51) International Patent Classification⁷: C12N 9/64,
15/12, C12Q 1/68, A01K 67/027

(21) International Application Number:
PCT/GB2003/005404

(22) International Filing Date:
11 December 2003 (11.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0228957.7 11 December 2002 (11.12.2002) GB

(71) Applicant (for all designated States except US): INPHARMATICA LIMITED [GB/GB]; 60 Charlotte Street, London W1T 2NU (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): FAGAN, Richard, Joseph [US/GB]; Inpharmatica Limited, 60 Charlotte Street, London W1T 2NU (GB). MICHALOVICH, David [GB/GB]; Inpharmatica Limited, 60 Charlotte Street, London W1T 2NU (GB). NUGENT, Timothy, Charles, Oliver [GB/GB]; Inpharmatica Limited, 60 Charlotte Street, London W1T 2NU (GB).

(74) Agents: GOODFELLOW, Hugh, Robin et al.; Carpmiels & Ransford, 43-45 Bloomsbury Square, London WC1A 2RA (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
23 September 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SERINE PROTEASE

(57) Abstract: This invention relates to a novel protein, termed INTP039, herein identified as a serine protease, in particular, as a member of the trypsin family of proteins and to the use of this protein and nucleic acid sequence from the encoding genes in the diagnosis, prevention and treatment of disease.

WO 2004/053117 A3

INTERNATIONAL SEARCH REPORT

national Application No

PCT/GB 03/05404

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N9/64 C12N15/12 C12Q1/68 A01K67/027

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, EMBL, BIOSIS, EMBASE, WPI Data, SEQUENCE SEARCH, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/00860 A (SUGEN INC ;WHYTE DAVID (US); CAENEPEEL SEAN (US); CHARYDCZAK GLEN) 3 January 2002 (2002-01-03) See whole document and in particular SEQ ID NO:27, SEQ ID NO:86, page 177 and claims.	1-13,15, 19-47
X	WO 00/53756 A (BOTSTEIN DAVID;BAKER KEVIN P ; GENENTECH INC (US); ASHKENAZI AVI J) 14 September 2000 (2000-09-14) See whole document and in particular SEQ ID NO:131, SEQ ID NO:132, Figs.48, 49 and Example 22.	1-13,15, 19-47

	--- --/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance.
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

14 June 2004

Date of mailing of the international search report

03/08/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Ury, A

INTERNATIONAL SEARCH REPORT

mational Application No

PCT/GB 03/05404

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL 'Online! EBI; 28 May 2002 (2002-05-28) NCI-MGC: "AGENCOURT_7826942 NIH_MGC_67 Homo sapiens cDNA clone IMAGE:6152963 5', mRNA sequence. EST." Database accession no. BQ437135 XP002284329 the whole document</p>	11-13
A	<p>VIVIEN D ET AL: "SERINE PROTEASE INHIBITORS: NOVEL THERAPEUTIC TARGETS FOR STROKE?" JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM, RAVEN PRESS, LTD., NEW YORK, NY, US, vol. 20, no. 5, May 2000 (2000-05), pages 755-764, XP008005770 ISSN: 0271-678X the whole document</p>	1-13,15, 19-47
A	<p>CALIFF ROBERT M ET AL: "Prediction of 1-year survival after thrombolysis for acute myocardial infarction in the Global Utilization of Streptokinase and TPA for Occluded Coronary Arteries trial" CIRCULATION, vol. 101, no. 19, 16 May 2000 (2000-05-16), pages 2231-2238, XP002284327 ISSN: 0009-7322 cited in the application the whole document</p>	1-13,15, 19-47
A	<p>DUFFY MICHAEL J: "Urokinase plasminogen activator and its inhibitor, PAI-1, as prognostic markers in breast cancer: From pilot to level 1 evidence studies" CLINICAL CHEMISTRY, vol. 48, no. 8, August 2002 (2002-08), pages 1194-1197, XP002284328 ISSN: 0009-9147 the whole document</p>	1-13,15, 19-47

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Although claim(s) 20-29 are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Although claims 35-37 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box I.2

Claims Nos.: 14, 16-18

Present claims 14, 16-18 are product claims involving:

- ligands of the INTP039 polypeptide (putative serine protease).
- compounds that increase or decrease the level of expression or activity of the INTP039 polypeptide (putative serine protease).

i.e. products defined by reference to a desirable characteristic or property, in other words purely speculative compounds.

However, for such compounds, the application provides neither support within the meaning of Article 6 PCT (the compounds are not clearly and unambiguously characterized in the claims by technical features) nor disclosure within the meaning of Article 5 PCT (no such compounds are defined in the application).

In consequence, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the compounds by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 03/05404

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☒ Claims Nos.: 14, 16-18
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 03/05404

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0200860	A	03-01-2002	AU 7142701 A	08-01-2002
			CA 2412635 A1	03-01-2002
			EP 1320614 A2	25-06-2003
			JP 2004501637 T	22-01-2004
			WO 0200860 A2	03-01-2002
			US 2002064856 A1	30-05-2002
WO 0053756	A	14-09-2000	AU 771751 B2	01-04-2004
			AU 1748200 A	19-06-2000
			AU 768230 B2	04-12-2003
			AU 1749900 A	12-07-2000
			AU 2192800 A	12-07-2000
			AU 2224800 A	28-09-2000
			AU 2399300 A	28-09-2000
			AU 2495200 A	28-09-2000
			AU 2596700 A	28-09-2000
			AU 2600800 A	28-09-2000
			AU 756400 B2	09-01-2003
			AU 2879400 A	31-07-2001
			AU 2883600 A	28-09-2000
			AU 762055 B2	19-06-2003
			AU 3072199 A	27-09-1999
			AU 3107700 A	28-09-2000
			AU 3381600 A	28-09-2000
			AU 768694 B2	08-01-2004
			AU 3514400 A	28-09-2000
			CA 2321677 A1	16-09-1999
			CA 2347835 A1	08-06-2000
			CA 2353775 A1	29-06-2000
			CA 2353799 A1	29-06-2000
			CA 2361840 A1	14-09-2000
			CA 2361849 A1	14-09-2000
			CA 2362427 A1	14-09-2000
			CA 2365610 A1	26-07-2001
			CA 2367334 A1	14-09-2000
			CA 2450402 A1	29-06-2000
			EP 1173563 A1	23-01-2002
			EP 1263948 A2	11-12-2002
			EP 1159419 A1	05-12-2001
			EP 1220905 A2	10-07-2002
			EP 1135485 A2	26-09-2001
			EP 1141284 A2	10-10-2001
			EP 1159422 A1	05-12-2001
			EP 1141289 A2	10-10-2001
			JP 2004512803 T	30-04-2004
			JP 2003524385 T	19-08-2003
			JP 2003529317 T	07-10-2003
			JP 2003524390 T	19-08-2003
			JP 2003525585 T	02-09-2003
			JP 2003531811 T	28-10-2003
			JP 2003274977 A	30-09-2003
			JP 2003274978 A	30-09-2003
			JP 2003274979 A	30-09-2003